

What is claimed is:

1. A liquid-crystal display element wherein an array substrate on which a plurality of liquid-crystal injection areas are arranged and each liquid-crystal injection area is surrounded by a seal having an aperture and said an overall liquid-crystal injection areas being surrounded by an outer peripheral seal having an aperture, and an opposing substrate are adhered together, said aperture of the outer peripheral seal being sealed by a hole sealant, and a surface of at least one of said array substrate and said opposing substrate being polished with a polishing material, and thereafter, an end portion of at least either one of said array substrate and said opposing substrate being polished with end polishing operation so as to remove residual polishing material therefrom, after which cutting plurality of liquid-crystal injection areas along lines as formed between the opposite said aperture holes so as to separate individual liquid-crystal injection areas.

2. A liquid-crystal display element according to claim 1, wherein a plurality of said apertures of said outer peripheral seal are provided along said outer peripheral seal and at crossing points each being formed between said outer peripheral seal and a line along which said individual liquid-crystal injection areas are cut apart.

3. A liquid-crystal display element according to claim 1, wherein after separating an individual liquid-crystal injection area, liquid crystal is injected into said liquid-crystal injection area, hole sealing is performed, and a polarizer is adhered thereto.

4. A liquid-crystal display element according to claim 1, wherein said seal and outer peripheral seal comprise an epoxy resin, and further wherein said hole sealant comprises UV-curing acrylic resin and further wherein said polishing material is alumina polishing material.

5. A liquid-crystal display element array which comprises an array substrate and an opposing substrate and a plurality of liquid-crystal injection

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areas, each being surrounded by a seal having an aperture and said an overall liquid-crystal injection areas being further surrounded by an outer peripheral seal having apertures sealed with a hole sealant, both of which being formed between said array substrate and said opposing substrate, wherein at least a surface of either one of said array substrate and said opposing substrate being polished and at least an end portion of either one of said array substrate and said opposing substrate being polished, and further wherein a plurality of said apertures of said outer peripheral seal being provided along each one of said outer peripheral seals and at crossing points each being formed between said outer peripheral seal and a virtual line along which said individual liquid-crystal injection areas would thereafter be cut apart.

6. A liquid-crystal display element array according to claim 5, wherein said end portion of of either one of said array substrate and said opposing substrate showing a tapered configuration.

7. A method for manufacturing a liquid-crystal display element comprising:

a first step of forming a plurality of liquid-crystal injection areas surrounded with a seal on an array substrate;

a second step of adhering said array substrate on which overall said liquid-crystal injection areas being surrounded by an outer peripheral seal having an aperture and an opposing substrate;

a third step of sealing said aperture of said outer peripheral seal using a hole sealant;

a fourth step of polishing a surface of at least one of said array substrate and said opposing substrate using a polishing material;

a fifth step of polishing an end surface of at least one of said array substrate and said opposing substrate, using a polishing material and removing said polishing material; and

a sixth step of cutting said liquid-crystal injection areas along a

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virtual lines each formed between said apertures each provided on two of said outer peripheral seals, respectively, and each of said outer peripheral seals being oppositely arranged to each other.

8. A method for manufacturing a liquid-crystal display element according to claim 7, wherein said second step includes a seventh step of providing a plurality of said apertures being provided along each one of said outer peripheral seals and at crossing points each being formed between said outer peripheral seal and a virtual line along which said individual liquid-crystal injection areas would thereafter be cut apart.

9. A method for manufacturing a liquid-crystal display element according to claim 7, wherein said sixth step includes an eighth step of injecting liquid crystal into each said liquid-crystal injection area, sealing said hole, and adhering a polarizer.

10. A method for manufacturing a liquid-crystal display element according to claim 7, wherein:

said first step includes a ninth step of forming a seal using an epoxy resin;

said second step includes a tenth step of forming an outer peripheral seal using an epoxy resin; and

said third step includes an eleventh step of forming a hole sealant with a UV-curing acrylic resin.

11. A method for manufacturing a liquid-crystal display element according to claim 7, wherein said fourth step includes:

a twelfth step of performing polishing using an alumina polishing material;

a thirteenth step of performing lapping; and

a fourteenth step of performing final polishing,

and wherein said fifth step includes a fifteenth step of chamfering

~~the polished end surface.~~

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